2. Primary energy is the total ~~amount~~ resource used in the production of heat and power. It is derived principally from solid fuels, petroleum products and hydroelectric. Increase is its most basic indication of economic development.

MEMORANDUM FOR: Director of Central Intelligence

THROUGH: Deputy Director/Intelligence

SUBJECT: Primary Energy Production in the Sino-Soviet Bloc and the Free World

1. This memorandum is in response to your request for comparative data on the growth of primary energy production in the Sino-Soviet Bloc and the Free World.

2. During the next five years the Sino-Soviet Bloc plans a higher rate of growth in production of energy than the Free World. In 1955 the Bloc equalled 30 percent of Free World production. In 1960 it will increase to about 40 percent. Despite this relative increase, however, the absolute gap between the Bloc and the Free World will not decrease. In fact the Free World primary energy production will increase 15,200 trillion Btu while Bloc production will increase 12,600 trillion Btu. Thus the gap will actually increase by about 2,600 trillion Btu.

3. Soviet Bloc energy production, unlike that of the Free World, is primarily dependent upon solid fuels. While Free World energy production is primarily dependent upon petroleum products, Bloc production of petroleum increases however the importance of solid fuels is declining.

~~percent of the output of the Free World in 1955, will increase to about 78 percent of the output foreseen for the Free World.~~ ~~However,~~ By 1960, solid fuels are expected to supply only about 75 percent of total Bloc energy production compared with about 81 percent in 1955. ~~This decline reflects the ever-increasing importance of petroleum products.~~ ~~Crude oil and natural gas will become relatively more important as a source of Bloc energy.~~ In 1960 petroleum products ~~they will be the source of about one quarter~~ account for 25 percent of total Bloc energy as compared with 18 percent today. ~~Energy produced by the Bloc from these sources in 1960 will be about 15 percent of that to be produced by the Free World, compared with only 10 percent today.~~

5. In 1955 hydro-~~electric~~ power ~~plants~~ contributed only ~~a very small part to the total world production of primary energy, a bit~~ of one percent to ~~the~~ total Sino-Soviet Bloc ~~total~~ energy production and 2 percent to the Free World total. These ~~shares~~ ratios will not change significantly by 1960.

6. Nuclear energy from ~~produced~~ electricity will not affect significantly the world output of ~~power~~ primary energy in 1960. ~~The consumption of electricity~~ nuclear energy programs of the US and USSR ~~in 1960~~

still will use more electricity than will be generated by ~~exceed the contribution made to the national energy~~ plants powered with nuclear fuel. ~~supply by these programs.~~

The USSR has announced that by 1960 it will have ~~goal of~~ from 2, ~~to 2.5~~ 000,000 to 2,500,000 ~~million~~ kilowatts of ~~nuclear energy~~ generating capacity, ~~which depending~~ utilizing nuclear fuel. ~~on unevaluated technical factors~~ If completed these power plants could supply ~~could yield a maximum of 20~~ ~~billion kilowatt hours of electricity annually. Under these conditions~~, over six percent of total Soviet electric power output. ~~would be supplied from nuclear energy in 1960.~~

Announced US plans provide for only a capacity of 800,000 ~~0.6 million~~ kilowatts [redacted] by 1960. ~~This is equivalent to about five billion~~ which could supply [redacted] about one half of one percent of ~~the forecast~~ total US ~~USSR~~ electric power energy output forcast for 1960.

7. The USSR, having produced 58 percent of the Bloc's total energy output in 1955, will increase this share to 62 percent in 1960. Conversely, the US share in the Free World ~~sup~~ output will drop very slightly and will amount to about one

half of the Free World total in 1960.

8. The attached table presents detailed data on the regional production of primary energy by principal categories. The attached charts present the above data graphically.

OTTO E. GUTHE
Assistant Director
Research and Reports

STATINTL [redacted] djs/x3011 (31 Jan 56)

MEMORANDUM FOR: Director of Central Intelligence

THROUGH: Deputy Director/Intelligence

SUBJECT: Primary Energy Production in the Sino-Soviet Bloc and the Free World

1. This memorandum is in response to your request for comparative data on the growth of primary energy production in the Sino-Soviet Bloc and the Free World. ~~Primary energy is produced from solid fuels, petroleum, and water power.~~ During next five years the Sino-Soviet Bloc plans ~~call for~~ a higher rate of growth in ~~the~~ production ~~of~~ energy than ~~is foreseen for~~ the Free World. ~~By 1960, the~~ Bloc production ~~of~~ energy will rise to about 40 percent of the ~~amount~~ to be produced by the Free World as ~~compared to~~ about 30 percent ~~in 1955~~. ~~The absolute difference~~, however, by which the energy output of the Free World exceeds Bloc energy output will be slightly larger in 1960 than in 1955.

"Bloc energy production in 1955 was 40 percent of Free World and will rise by 1960 to 40 percent. Despite this relative increase the gap will increase about 5 percent."

3. Soviet Bloc energy production, unlike that of the Free World, is primarily dependent upon solid fuels. By 1960, Bloc production of solid fuels, which amounted to about 58

percent of the output of the Free World in 1955, will increase to about 78 percent of the output foreseen for the Free World. However, by 1960, solid fuels are expected to supply only about 75 percent of total Bloc energy production compared with about 81 percent in 1955, [illegible]

4. Crude oil and natural gas will become relatively more important as a source of Bloc energy. In 1960 they will be the source of about one quarter of total Bloc energy as compared with 18 percent today. Energy produced by the Bloc from these sources in 1960 will be about 16 percent of that to be produced by the Free World, compared with only 10 percent today.

5. In 1955 hydro-electric plants contributed a very small part to the total world production of primary energy, [redacted] 0.5 percent to the Sino-Soviet Bloc total and 2 percent to the Free World total. These shares will not change significantly by 1960.

6. Nuclear energy produced electricity will not affect significantly the output of power in 1960. The consumption of electricity by nuclear programs in the US and USSR in 1960

still will exceed the contribution made to the national energy supply by these programs.

The USSR has announced a 1960 goal of from 2 to 2.5 million kilowatts of nuclear energy capacity, which--depending on unevaluated technical factors--could yield a maximum of 20 billion kilowatt-hours of electricity annually. Under these conditions, over sixxxxxxxxxxxxxxxx percent of Soviet electrical power would be supplied from nuclear energy in 1960.

Announced US plants provide for only 0.8 million kilowatt capacity by 1960. This is equivalent to about five billion kilowatt-hours annually, or about one half of one percent of the forecast total US 1960 electrical energy output.

7. The USSR, having produced 58 percent of the Bloc's total energy output in 1955, will increase this share to 62 percent in 1960. Conversely, the US share in the Free World xxx output will drop very slightly and will amount to about one

half of the Free World total in 1960.

8. The attached table presents detailed data on the regionalxxx production of primary energy by principal categories. The charts present these data graphically.

OTTO E. GUTHE
Assistant Director
Research and Reports

STATINTL

RR/C/M: [redacted] :djs/x3011 (31 Jan 56)

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MEMORANDUM FOR: Director of Central Intelligence

THROUGH: Deputy Director/Intelligence

SUBJECT: Primary Energy Production in the Sino-Soviet Bloc and the Free World

1. This memorandum is in response to your request for comparative data on the growth of primary energy production in the Sino-Soviet Bloc and the Free World.

2. Sino-Soviet Bloc plans call for a higher rate of growth in the production of energy than is foreseen for the ~~West~~ Free World. By 1960, the Bloc production of energy will rise to about 40 percent of the amount to be produced by the ~~West~~ Free World, as compared to about 30 percent in 1955. The absolute ~~amount~~ difference, however, by which the energy output of the Free World exceeds Bloc energy output will be slightly larger in 1960 than in 1955.

3. Soviet Bloc energy production, unlike that of the Free World, is primarily dependent upon solid fuels. By 1960, Bloc production of solid fuels, which amounted to about 58 percent of the output of the Free World in 1955, will increase to about 78 percent of the output foreseen for the Free World.

~~The dependence of the Bloc on solid fuels, however, will decline slightly, and is~~ However, by 1960, solid fuels are ~~it is EXPIE~~ expected ~~that they will~~ to support ~~only~~ supply about 75 percent of total Bloc energy production ~~rather~~ compared ~~than~~ with about 81 percent ~~as~~ in 1955, ~~and liquid fuels will make up~~

4. ~~Petroleum~~ Crude oil and natural gas will become relatively more important as a source of Bloc energy. In 1960 they will be the source of about one-quarter of total Bloc energy ~~in 1960~~ as compared with 18 percent today. Energy produced by the Bloc from these sources in 1960 will be about 16 percent of that to be produced by the Free World, ~~Today it amounts to~~ compared with only 10 percent of today. ~~e World output.~~

5. In 1955 hydro-electric plants contributed a very small part to the total world production of primary energy, 0.5 percent ~~of~~ to the Sino-Soviet Bloc total and 2 percent ~~of~~ to the Free World total. These shares will not change significantly by 1960.

6. Nuclear energy produced electricity will not affect significantly the output of power in 1960. The consumption of electricity by nuclear programs in the US and USSR in 1960 ~~wi~~ still will exceed the contribution made to the national energy supply by these programs. ~~The USSR~~

The USSR has announced a 1960 goal of from 2 to 2.5 million kilowatts of nuclear energy capacity, which--depending on unevaluated technical factors--could yield ~~as much as~~ a maximum of 20

billion kilowatt-hours of electricity annually. ~~The total~~ Under these conditions, over 6 percent of Soviet ~~output~~ electrical power in 1960 would be ~~increased by seven or eight percent if this goal, which will require the highest priority, is achieved~~ supplied from nuclear energy.

Announced US plants provide for only 0.8 million kilowatt capacity by 1960. This is equivalent to about five billion kilowatt-hours ~~(annual) electrical output~~ (annually), or about one half of one percent of the forecast total US 1960 electrical energy output.

7. The USSR, having produced 58 percent of the Bloc's total energy output in 1955, will increase this share to 62 percent in 1960. Conversely, the US share in the Free World output will drop very slightly and will amount to about one half of the Free World total in 1960.

8. The attached table presents detailed data on the regional production of primary energy by principal categories. The charts present these data graphically.

OTTO E. GUTHE
Assistant Director
Research and Reports

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